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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,154	10/18/2001	Brian E. Gorrell	3030-69081	7528

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EXAMINER

MAYO III, WILLIAM H

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 08/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,154

Applicant(s)

GORRELL, BRIAN E. *CN*

Examiner

William H. Mayo III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings et al (Pat Num 4,576,827, herein referred to as Hastings) in view of Dinzen et al (Pat Num 5,250,755, herein referred to as Dinzen). Hastings discloses a high voltage cable (Figs 1-9) utilized in a spray system. Specifically, with respect to claim 1, Hastings discloses a high voltage cable (Fig 9) including a fiber core (200, Col 14, lines 46-48), a first layer (202) of an electrically relatively non-insulative polymer (Col 14, lines 49-50), a second layer (204) of an electrically relatively non-conductive polymer (Col 15, lines 5-8), a fourth layer (206) including a metal braid shield (Col 15, lines 14-16), and a fifth layer (210) including a relatively solvent- and abrasive-resistant polymer jacket (Col 15, lines 20-21). With respect to claim 2, Hastings discloses that the fiber core (200) includes a stranded fiber polyester core (i.e. Dacron, Col 14, lines 46-48). With respect to claims 9-10, Hastings discloses that the second layer (204) may include a layer of non-conductive layer of low-density polyethylene (Col 15, lines 5-7). With respect to claim 17, Hastings discloses that the metal braid shield (206) includes a metal braid covering between about 100% of the outside surface of the second layer

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(204) of electrically relatively insulative polymer (Fig 9). With respect to claim 19, Hastings discloses that the polymer jacket (210) includes a flexible polyurethane jacket (Col 15, lines 19-20). With respect to claim 18, Hastings discloses that the fourth layer (206) including a metal braid shield has a pitch (Fig 9). With respect to claim 20, Hastings discloses that cable (Fig 1a) is in combination with a high magnitude electrostatic potential supply (16a), a device (spray gun) for the electrostatically aided atomization and dispensing of a coating material (Col 7, lines 20-30), a source (4a) of the coating material coupled to the device (spray gun), and wherein the high voltage cable (16) is coupled to the potential supply (16a) to the device (spray gun, Col 7, lines 59-64).

However, Hastings doesn't necessarily disclose a third layer of an electrically relatively non-insulative polymer being between the insulative and braided materials (claim 1), nor the third layer being PVC (claim 11), nor the PVC layer being a spirally wrapped (claims 12-13), nor the metal braid shield being a copper containing braid shield (claim 14), nor the metal braid comprising tin (claim 15), nor the braided shield comprising a tin containing braid shield (claim 16), nor the nor the fourth braided layer surrounding the third layer of conductive material (claim 17), nor the pitch of the braid shield being between 0-20° to a perpendicular to the longitudinal extent of the cable (claim 18).

Dinzen teaches a high voltage cable (Figs 1-2) having a configuration that is known in the art of cables (Col 4, lines 30-65) for carrying high voltages without damaging the cable itself (Col 1, lines 7-13). Specifically, with respect to claims 1 & 17,

Dinzen teaches a conventional cable (Fig 1a) comprising a core (1) surrounded by a first layer conductive sleeve (2), a second layer high voltage insulative sleeve (3) surrounding the first layer conductive sleeve (2), a third layer conductive sleeve (4) surrounding the second layer high voltage sleeve (3), a fourth layer of braided wires (5) surrounding the third layer conductive sleeve (4), and an outer casing of PVC (6) surrounding the fourth layer of braided wires (5, Col 4, lines 30-50). With respect to claims 11-12, Dinzen teaches that the third layer of conductive material (4) extending between the second layer of insulative material (3) and the fourth layer of braided conductive material (5), may be made of an synthetic resin, such as embedded PVC (Col 1, lines 50-58). With respect to claim 14, Dinzen teaches that the braided shield (5) is made of copper wires (Col 4, lines 60-62).

With respect to claims 1, 14, & 17, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable configuration of Hastings to comprise a third layer of conductive polymer material extending between the second layer of insulative material and a fourth layer of braided material and copper braided shield as taught by Dinzen because Dinzen teach that such a configuration is a conventional high voltage cable configuration and provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13).

With respect to claims 12-13 and 15-16, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of modified Hastings to comprise the layer to be a spirally wrapped PVC and copper-tin braided shield, since it has been held to be within general skill of a worker in the art to

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select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to claim 18, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the fourth layer of conductive braided shield to comprise a pitch of the braid shield to be between 0-20° to a perpendicular to the longitudinal extent of the cable, since it has been held that a change in form cannot sustain patentability where involved is only extended application of obvious attributes from a prior art. *In re Span-Deck Inc. vs. Fab-Con Inc.* (CA 8, 1982) 215 USPQ 835.

3. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings (Pat Num 4,576,827) in view of Dinzen et al (Pat Num 5,250,755, herein referred to as modified Hastings), as applied to claim 1 above, further in view of Hastings et al (Pat Num 4,739,935, herein referred to as Hastings2). Modified Hastings discloses a high voltage cable (Figs 1-9) utilized in a spray system as described above with respect to claim 1. Specifically, with respect to claims 3-6, modified Hastings (see Hastings) discloses that the fiber core (200) is impregnated with silicon carbide fibers (abstract). With respect to claims 7-8, modified Hastings (see Hastings) discloses that the first layer of electrically relatively non insulative polymer is made of semiconductive polypropylene loaded with carbon black (Col 14, lines 49-50). With respect to claims 14-16, modified Hastings discloses a fourth layer is a metal braid shield (Col 15, lines 14-15).

However, modified Hastings doesn't necessarily disclose the fiber core being impregnated to increase its bulk conductivity (claims 3 & 5), nor the fiber core being impregnated with carbon black (claims 4 & 6).

Hastings2 teaches a high voltage cable (Figs 1-3) utilized in a spray system, that eliminates the possibility of having corona inducing voids or spaces between the carbon loaded sheath and the outer dielectric layers, thereby eliminating the possibility of cable failure (Col 2, lines 27-42). Specifically, with respect to claim 3, Hastings2 teaches that the fiber core (42) is impregnated to increase its bulk conductivity (i.e. silicon carbide). With respect to claim 4, Hastings2 teaches that the fiber core (42) is impregnated with carbon black (i.e. silicon carbide). With respect to claim 5, Hastings2 teaches that the fiber core (42) is impregnated to increase its bulk conductivity. With respect to claim 6, Hastings2 teaches that the fiber core (42) is impregnated with carbon black (i.e. silicon carbide). With respect to claim 7, Hastings2 teaches that the first layer (202) includes a layer of semiconductive polyethylene (Col 14, lines 50-55). With respect to claim 8, Hastings2 teaches that the first layer (44) includes a layer of semiconductive polyethylene that includes a layer of carbon black-loaded polyethylene (Col 4, lines 50-55).

With respect to claims 3-8, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable of modified Hastings to comprise the material configuration as taught by Hastings2 because Hastings2 teaches that such a configuration eliminates the possibility of having corona inducing voids or spaces between the carbon loaded sheath and the outer

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dielectric layers, thereby eliminating the possibility of cable failure (Col 2, lines 27-42) and since it has been held to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Response to Arguments

4. Applicant's arguments filed June 16, 2003 have been fully considered but they are not persuasive. The applicant argues the following:

- A) That the combination of Hastings '827, Dinzen '755, with respect to claims 1-2 and 9-20, and the combination of Hastings '827, Dinzen '755, and Hastings '935, do not meet the requirements recognized by In re Lee to make out a prima facie case of obviousness under 35 USC 103(a) and therefore the combination is improper.

With respect to argument A, the examiner respectfully traverses. The examiner recognizes that in order to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaack,

947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - §2143.03 for decisions pertinent to each of these criteria. First, it is submitted that both Hastings '827 and Dinzen '755 both are concerned with high voltage cables, that have specific configurations to provide the high voltage cable with protection from internal damage, that results from high voltage voltages (see Col 2, lines 45-68 of '935 & Col 1, lines 5-14 of '755). The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Hastings '827 clearly teaches a configuration for a high voltage cable for the purpose of providing the high voltage cable with protection from internal damage, that results from high voltage voltages at a reduced manufacturing cost (see Col 2, lines 45-68 of '935). However, Hastings '827 doesn't necessarily disclose a third layer of an electrically relatively non-insulative polymer being between the insulative and braided materials (claim 1), nor the third layer being PVC (claim 11), nor the PVC layer being a spirally wrapped (claims 12-13), nor the metal braid shield being a copper containing braid shield (claim 14), nor the metal braid comprising tin (claim 15), nor the braided shield comprising a tin containing braid shield (claim 16), nor the nor the fourth braided layer surrounding the third layer of conductive material (claim 17), nor the pitch of the braid shield being between 0-20° to a perpendicular to the longitudinal extent of the cable (claim 18). The examiner relied on

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Dinzen for its teaching of a conventional high voltage cable (Fig 1a) having a known configuration to provide the high voltage cable with protection from internal damage, that results from high voltage voltages (see Col 1, lines 5-14 of '755). Specifically, Dinzen teaches a conventional high voltage cable comprising a core (1) surrounded by a first layer conductive sleeve (2), a second layer high voltage insulative sleeve (3) surrounding the first layer conductive sleeve (2), a third layer conductive sleeve (4) surrounding the second layer high voltage sleeve (3), a fourth layer of braided wires (5) surrounding the third layer conductive sleeve (4), and an outer casing of PVC (6) surrounding the fourth layer of braided wires (5, Col 4, lines 30-50), which provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13). One of ordinary skill in the art would recognize that providing high voltage cables with different configurations are known as taught by Dinzen, and that modifying any high voltage cable with known materials and configurations as taught by Dinzen in the art of cables, would be considered to be an obvious matter of design choice. Specifically, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable configuration of Hastings to comprise a third layer of conductive polymer material extending between the second layer of insulative material and a fourth layer of braided material and copper braided shield as taught by Dinzen because Dinzen teach that such a configuration is a conventional high voltage cable configuration and provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13) and it appears that Hastings '827 would perform the task of providing protection of the high voltage cable equally well with or without the

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modification of the known cable of Dinzen. Therefore, there exist a motivation to combine the teachings of Hastings '827 and Dinzen '755 and there exist a reasonable expectation of success. Thirdly, the references, when combined, teach all of the claim limitations. With respect to the combination of Hastings '827, Dinzen '755, further in view of Hastings '935, it is submitted that Hastings '935, also is concerned with a specified configuration, that provides a high voltage cable with internal protection of the during the duration of provide high voltages. Specifically, modified Hastings '827 (the combination of Hastings '827 & Dinzen '755) teach all of the claim limitations, except the fiber core being impregnated to increase its bulk conductivity (claims 3 & 5), nor the fiber core being impregnated with carbon black (claims 4 & 6). Hastings '935 teaches a high voltage cable (Figs 1-3) that eliminates the possibly of having corona inducing voids or spaces between the carbon loaded sheath and the outer dielectric layers, thereby eliminating the possibly of cable failure (Col 2, lines 27-42). Therefore, there exist a motivation to combine the teachings of modified Hastings '827 and Hasting '935. Secondly, there exist a reasonable expectation of success. Thirdly, the references, when combined, teach all of the claim limitations. In light of the above explanation, the examiner respectfully submits, that a proper prima facie case of obviousness has been met and that the combination of Hastings '827, Dinzen '755, and Hastings '935 is proper and therefore just.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Betso et al (Pat Num 6,524,702) and Hirsch (Pat Num 4,725,693), both of which disclose high voltage cables.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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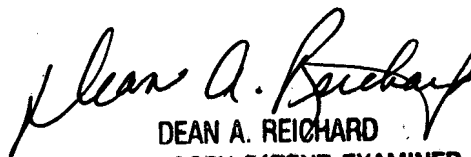
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305-3432 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

WHM III
August 10, 2003

 8/11/03
DEAN A. REICHARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800